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ORIGINAL DEPARTMENT.

COMMUNICATIONS.

REPORT ON THE RELATIONS OF THE DRAINAGE AND SEWERAGE OF PHILADELPHIA TO THE PREVALENCE OF TYPHOID FEVER IN THAT CITY.

Read by Dr. Cleemann, before the Philadelphia County Medical Society.

The greater healthfulness of Philadelphia as compared with that of some other large cities in America, its average mortality, calculated over several years, being thirty-four per cent. less than that of New York city, and thirteen per cent. less than that of Boston, is perhaps a sufficient reason why problems in State medicine have attracted less public attention here than in some other places.

However, the nearly doubling over the average rate for several years of the number of deaths from typhoid fever in Philadelphia last year, an increase which must be looked upon as startling in the mortality of a disease considered by sanitarians as "preventible," should prove a sufficient stimulus to banish this culpable apathy. And when we learn that during the same period the deaths from the fever in New York city, notwithstanding its greater general insalubrity, numbered but 200, while with us, among a population twenty-five per cent. less, they reached the figures 774, we will naturally turn to the peculiarities of our local surroundings in searching out the causes of our greater affliction.

Now, in England, where especially public hygiene has been the subject of careful observation and study, the methods of drainage and

sewerage and their defects are considered of supreme importance in the question of the presence or absence of typhoid fever. Hence your "Committee on Hygiene and the Relations of the Medical Profession to the Public" appointed one of its membership to furnish a report on the "Relations of the Drainage and Sewerage of Philadelphia to the Prevalence of Typhoid Fever in that City." It is that report which I offer to-night, not as exhaustive of the subject, but rather as a nucleus around which may grow, I hope, a profitable discussion of this important matter.

The great number of observations which have now been accumulated of the coincidence of local outbreaks of the fever with the exposure to inhalation of air, or to the drinking of water, which has been contaminated by the exhalations or soakings from privies and foul sewers, allows the inference that the decomposition of organic matter lies in a causative relation to typhoid fever.*

But the freedom from the disease in many cases where the putrescence was very conspicuous, as, for instance, in London, in the summer of 1858, when the water of the Thames was in a frightful condition from the presence of decomposing sewage,† has led, with other reasons not necessary here to be enumerated, to the reservation that another factor is wanted to determine an outbreak of the zymotic, namely, the presence of a specific poison.‡ And so

* Murchison; *Treatise on Continued Fevers of Great Britain*, second edition, pp. 471, *et seq.*, London, 1873.

† Simon; *Report of Medical Officer of the Privy Council*, new series, No. II, p. 10, London, 1874.

‡ Budd, *Lancet*, vol. II, 1859.

often has the fever attacked those who have come in contact with the putrefying alvine excreta of those sick with the disease, and epidemics have occurred after such matter has been deposited among decomposing organic substances previously innocuous in this direction, that the opinion has gained ground that the suspected poison has its nidus among the feces of the typhoid fever patients.*

While the above inferences may not yet be accepted by all as final, they have at least enough testimony in their favor to warrant their use as the basis of practical action, and I will express them in the following propositions:—

1. Typhoid fever results from the action of a specific poison, which has found its way into the human system.

2. The poison resides among the immediate products of the decomposition of organic substances.

3. The source of the poison is within the intestines of one already sick with the disease, whence it passes out with the dejecta.

In the light of these dicta, it is evident that the relationship of the drainage and sewerage † of a town to the prevalence there of typhoid fever, is to be defined by the agency of their processes in—

(a) Preventing dampness of the soil (which would furnish one of the conditions of putrefactive action).

(b) Removing all organic refuse, susceptible of decomposition, especially excrementitious matters, with their possible contamination of typhoid fever poison.

(c) Favoring, through defects in the system, the introduction of noxious matters into the breathing air.

(d) Leading to the impregnation of drinking water with the same.

If we go back into the development of the system of drainage and sewerage in Philadelphia, we shall find that originally surface drainage alone was practiced here. Inclined gutters were made along the sides of the streets, advantage being taken of the natural slopes toward the neighboring rivers and their contributing streams, which intersected the rather uneven plot on which the city has been

built, and into these gutters smaller ones led from the houses. As the town increased in size, however, territory was taken up for building lots, in which a sufficient fall for the gutters could not be obtained without cutting off larger areas of surface than was practicable, and then underground drains were introduced for these places, in connection with the open gutters; these were circular in form, of large size, built of brick, and discharged into the rivers or streams; they were laid on such a plane that the tide would flow up them on the flood, to recede on the ebb. In time, also, the borders of the smaller streams were filled in, and the flowing water confined in brick culverts of similar construction to the drains just described. Up to this period the functions of the system were merely the removal of the storm water, the overflow from hydrants, and the refuse washings from the kitchens. In later years, however, a modification in the arrangements of the system in some parts of the city accompanied an addition to its functions. Water closets were introduced into the houses, the pipes of which led directly to the large brick drains; and connections were made from "stationary" wash basins and "sinks" in the same manner. As the sewer is laid under the street on which the house is situated, this necessitated that all the pipes communicating with it from the rear of the dwelling should pass through or under the house, to reach it.

Such, briefly, is the system of drainage and sewerage as it is found in Philadelphia to-day. Applying to it the tests above proposed, it is clear that, as constituted before the complicating innovations last mentioned were added, which, indeed, are still confined to the lesser portion of the city, it can hold but small relation, for good or for evil, to the prevalence of typhoid fever. In this earlier simplicity it does, indeed, in some measure, prevent dampness of the soil, but it bears away comparatively little organic matter, and that little unmixed with human excrement. On the other hand, though the large size of the drains and the roughness of their brick interiors may permit the accumulation of noxious matters within them, which may become contaminated in some unknown way with the poison, yet the foul exhalations cannot enter directly the houses, since it is to be borne in mind these have no immediate connection with the sewers, but will escape freely through the untrapped sewer inlets, and become

* Budd, *Lancet*, vol. II, 1859.

† These are considered together, as the means employed to secure the one generally embrace also the measures to accomplish the other.

diluted to a harmless extent before reaching human nostrils. A reservation must be made here, however, in regard to an indirect evil of this system of drainage; the passage of the waste water from the house, over a considerable distance before the sewer is reached, allows a portion, charged with organic particles, to soak through the often ill-paved surface of the gutters, to contaminate with putrescible matter the soil beneath. Here it meets with the soakings from the privy vaults, which occupy positions in the house-yards, and the conditions are aggravated for producing there the typhoid fever poison, which will be in the way of doing its deadly work when, for any reason, this earth is upturned to the upper air. Like evils may arise about the sewers themselves, since the bricks of these are sometimes laid without mortar.

But with the additions of the later years entailed upon our system of drainage, can we not discern a more direct bearing for it upon the extension of typhoid fever? While it may be acting a good part in removing some of the excrement which would otherwise lie close to our doors, will not these solid matters accumulate very quickly in sewers made as ours have been seen to be built, with a view to the carrying off of liquids only, which exacts but slight fall and little smoothness of interior? And will not the tide-compressed atmosphere of the drains, infected from these accumulations, which have come from a population among which the fever is endemic, force itself, with fatal concentration, through defects in the construction or condition of the house-connecting pipes, into the dwellings?

Affirmative answers to these questions seem to be *a priori* required, but the conjectured effects, if they really exist, are not of sufficient magnitude to appear when the statistics of the Health Office are consulted.

Thus, referring to the records of last year's mortality for that part of the city formerly known as the "city proper" (5th, 6th, 7th, 8th, 9th, and 10th wards), in which the obnoxious modifications of the system of sewerage are most numerous, I found that there occurred in this district, which has a population of 130,000 souls, compassed in an area of two and a quarter square miles, thirty-four deaths from typhoid fever, exclusive of the hospital cases. Now, searching out the residences of those persons who died from the disease, I learned that these were situated, in twenty-four instances,

on streets on which no sewers had been laid, while in but ten were they so placed that a connection with the drains was possible.

But a most important consideration remains, as to whether, since the sewers discharge into the rivers from which we draw our water supply, this has not become sufficiently polluted to sensibly multiply the cases of fever.

We cannot determine this point by a direct examination of the water, since the mysterious poison has so far eluded the penetration of the microscope, and the analysis of chemistry. It is true we may estimate by the latter the degree of sewage contamination, but, important as such pollution may be when the specific contagium is also present, we have seen that it is of no importance, as far as typhoid fever is concerned, when this is absent. We have only the special effects of the poison upon the community to guide us in its search. An intelligent examination of these, however, will lead us, I believe, to a satisfactory solution of our problem.

It seems to me fair to assume that, in districts the inhabitants of which are supplied with infected drinking water, the universality of exposure on the part of the communities to its evil effects will lead to a quite uniform distribution of the deaths induced by it over them. And conversely that, where this distribution is found to be very unequal, any marked influence of the drinking water in causing the disease may be denied. Now, having recourse once more to the health records of the city, I discover that the death rate from typhoid fever, for August and September of last year, over the district described above, all of which is supplied from the Fairmount Reservoir with Schuylkill water, varied very much. The part east of Seventh street gives a ratio of but 1.3 deaths per ten thousand of inhabitants, while that on the west reaches the figures of 3.4 per ten thousand. Further, among the municipal divisions drawing their water from the river Delaware, the contiguous Twelfth and Thirteenth Wards, with a united population of 30,000 people, furnished, during July and August of the same year, only five deaths from typhoid fever, while the Nineteenth and adjacent Thirty-first Wards, containing together 70,000 inhabitants, gave a mortality of nineteen. These differences are sufficient, I think, to exclude the idea of the drinking water being seriously, if at all contaminated.

The explanation of these apparently anomalous results is, perhaps, to be found in the smallness of the number of house connections with the sewers, the flushing effects of the rain showers common in the warm weather, and the large volume of the streams into which the drains discharge.

I am led, then, to the conclusions that the system of drainage and sewerage of Philadelphia does almost nothing to prevent the spread of typhoid fever; but that, on the other hand, it stands for little in its development; yet that it possesses some elements of possible danger; and if we would banish the insidious enemy from among us we must look to other means than this system, or else change its methods and enlarge its functions. Should the latter course be decided upon, a system should be so devised that the pipes might carry away all the excrement which now lies rotting in the privy-vaults, and that the kitchen and other waste water might reach the mains without coursing over the intermediate ground. The sewers themselves should be constructed of glazed earthen ware, of smaller calibre, oval in section, and with greater incline, that liquid matters might not penetrate their walls, and that solids might more easily, completely and quickly pass along them. Their outlets should be within intercepting mains laid along the banks of the rivers, these mains themselves to discharge a sufficient distance below the mouths of the supply pipes of the reservoirs of drinking water, and to be so arranged that the tide might not invade them. The dangers of the contamination of the house atmosphere from such a system can be successfully opposed by properly trapped pipes and well placed ventilating shafts.

CASE OF TRAUMATIC TETANUS TREATED SUCCESSFULLY WITH LARGE DOSES OF CANNABIS INDICA AND STIMULANTS.

BY ISAAC N. SNIVELY, M.D.

(Read before the Franklin County Medical Society,
January 6th, 1874.)

John Harvey Miller, aged nine and a half years, on the twelfth day of November, 1874, jumped from a tree, and ran a sprig of apple limb into the sole of his left foot. He pulled it out, as he thought, but unfortunately a portion remained in the wound, which healed over,

and gave no trouble until November 27th, fifteen days after the injury, when he commenced complaining of pain in his foot and stiffness in his back.

November 28th. The pain increased, and the stiffness extended itself to his neck and jaws.

November 29th. These symptoms still further increased.

November 30th. His back became quite rigid and painful.

December 1st. Convulsive movements commenced.

December 2d. Pain and convulsive movements increased, and became so violent that, in the night, I was sent for. I prescribed one-sixth of a grain of sulphate of morphia every two hours, until he was rendered comfortable.

December 3d, noon. Now, for the first time, I was able to see the case personally. A careful examination of the foot revealed a portion of the sprig of apple-wood, which was removed. He was suffering with trismus, opisthotonos and pleurothotonos. The body was drawn on the side of the injured limb. His jaws were completely locked, the faculty of mastication being entirely abolished. Attempts at deglutition excited spasm in his throat, of a most distressing character. Fluids were swallowed with great difficulty, a portion always forcing their way into the nose. There was great distress in the region of the diaphragm. The muscles of his spine were so contracted as to draw his body into a complete arch, it resting principally on the occiput and heels, inclining on the left or injured side. The least noise or excitement would throw him into spasms, convulsing his entire body, and greatly increasing his general suffering. His bowels being constipated, I ordered a brisk purgative and ten drops of Keith's concentrated tincture of cannabis indica every half hour, gradually increased, until the system was brought fully under its influence. Pulse 140 per minute; temperature 104 degrees. Milk was administered, through a nursing bottle, as freely as he was able to swallow.

December 4th, noon. Pulse 130; temperature 103½°. He was freely purged, quite nervous, and considerably prostrated, but continued under the influence of the cannabis indica, rendering him tolerably comfortable. My Keith's preparation being nearly exhausted, I ordered some pure tincture from Mr. C. H.

Cressler, druggist, Chambersburg, Pa., who informed me that it was prepared from the fresh drug.

December 5th, noon. Condition much the same. Before receiving a fresh supply of the tincture cannabis indica, my patient was without the medicine three or four hours, when he grew much worse. I ordered the drug to be given freely until he was brought fully under its influence.

December 6th, noon. Pulse 130; temperature 102½°. Patient irritable and easily excited. He takes a fluid drachm of the tincture every half hour.

December 7th, noon. Pulse 130; temperature 102½°. The rigidity of the muscles is still very great, but he continues to take plenty of milk. His bowels are moved once or twice daily.

December 8th, 1 o'clock P.M. Continues the same. I notice an eruption all over his body, produced, no doubt, by the free use of the cannabis indica.

December 9th, 1 o'clock P.M. Continues the same. He sleeps very little and his pulse is becoming alarmingly feeble.

December 10th, noon. He sleeps very little, and in consequence his nervous prostration is very great, and he is now bathed in profuse perspiration. I am giving, in conjunction with the milk, as much good rye whisky as he can drink.

December 11th, noon. Feeble, but continues his medicine, stimulants and nourishment, sucking them through, between his teeth, from a nursing bottle.

December 12th, noon. Continues the same.

December 13th, noon. He refuses his medicine and milk at times, and consequently suffers more than he has for some time. His nurse says he always grows worse as soon as the tincture is suspended.

December 14th. He is apparently sinking. His friends refuse to trouble him further by "forcing nourishment and medicines into him," as they express it. I insist upon a continuance of the treatment according to my former directions, notwithstanding the apparent hopeless condition of the case.

December 15th, noon. Pulse 128; temperature 102°. Skin more firm. His bowels continue to move once or twice a day. He is again more comfortable.

December 16th, noon. Pulse 120; tempera-

ture 101°. The tincture is now given in two-drachm doses every half hour. He slept two hours last night. This was the first real tranquil sleep he had since he was taken ill.

December 17th, noon. Pulse 114; temperature 100¼°. Slept nearly all night. Convalescence is being established.

December 18th, noon. Pulse 108; temperature 99½. Did not rest so well, but general improvement continues.

December 19th, noon. Pulse 108; temperature 99¼°. There is less rigidity. He asked for some beef, but was unable to masticate it. His jaws open about one-third of an inch.

December 21st, noon. Pulse 100; temperature 99°. Less rigidity. He continues the tincture in smaller doses, and not so frequently repeated. Yesterday he became somewhat intoxicated, from the effects of the whisky. His system is more sensitive to the effects of medicines.

December 23d, noon. Pulse 100; temperature 99½°. Convalescence continues.

December 24th, noon. Pulse 100; temperature 98½°. Rapid improvement.

December 27th, noon. Pulse 100; temperature 98½°. Continues taking a small quantity of the cannabis indica. He is very anæmic. I ordered a solution of chlorate of potassa and tincture of iron, in addition to what he is taking.

December 29th. Pulse 105; temperature 99°. Appetite good, and able to sit up a portion of the day. The left, or injured foot, is left stiff, but is daily improving.

January 6th. Dismissed the case.

Having seen a good many cases of traumatic tetanus treated, during the late war, and since, with opium, bromide of potassium, chloroform and blisters along the spine, but no recoveries, and being impressed with the idea that the chances of life would be much enhanced if a substitute for opium could be procured which would not constipate the bowels, I was induced to give the cannabis indica a fair trial, and have now the pleasure of giving you the happy results. A number of my medical friends saw this case, and all considered it entirely hopeless.

The cannabis indica, in morbid states of the system, causes sleep, allays spasm, composes nervous inquietude, and relieves pain, differing from opium, in not diminishing the appetite, checking the secretions, nor constipating the

bowels. The extract of *cannabis indica*, when of good quality, will affect the system in doses of from one-half grain to a grain. Since this plant has these valuable properties over opium, have we not under-estimated its therapeutic value, especially in treating diseases of the nervous system?

P. S.—Since writing the above, in looking over some old medical journals, I found a very interesting paper, by Dr. P. C. Gaillard,* read before the Medical Society of South Carolina, October 1st, 1853, where he reported two cases of trismus nascentium which recovered under the use of *cannabis indica*. The one case occurred in his own practice, whilst the other was treated by Dr. De Saussure. In both these cases this drug was administered in very large doses and repeated every hour, until the violence of the symptoms abated.

ANEURISM OF THE ARCH OF THE AORTA.

BY LEONARD H. ROBBINS, M. D.,
Of Lincoln, Nebraska.

In June last I was called to see Mr. Stebbins, who was and had been suffering from the presence of a large tumor, situated at the top of the sternum, and extending either way from the median line two and a half inches, and upward about three and a half inches.

The history of the case is briefly as follows. During the winter of '76 and '77, he had suffered intense pain over the head, back of neck and shoulder. At this period a small tumor appeared just at the top of the sternum. At times he had quite serious difficulty in breathing; was easily fatigued; skin assumed a slate color at these times; cough more or less severe. He was treated by several physicians, for rheumatism, neuralgia, and various diseases. The tumor continued to enlarge, and when he came under my care it had become the size above indicated. There was excessive pain, cough, great difficulty in swallowing, dyspnoea, etc. The pain was in the left shoulder, back of neck, early in the disease, and finally in the right shoulder, etc., and at times so severe as to be unendurable. Pressure upon the nerves of the neck and chest produced severe cough, the bronchus being filled with a white tenacious mucous secretion, which seemed to suffocate the patient at periods. Dyspnoea great upon

patient taking exercise, and violent paroxysms at times, when he remained quiet. Respiration laborious, and could be heard from all parts of the house. Marked dullness over the upper and inner portion of the left lung. The stethoscope revealed a loud bellows sound, and at times a distinct metallic "click," that was repeated several times during intervals of one or two minutes, and that peculiar movement corresponding with the diastole and systole of the heart. Dysphagia at times prevented any liquids from being taken. Pulsation strong and visible to eye and ear, synchronously with the action of the heart. Pulse weak at the right wrist. Patient unable to assume the recumbent position, as suffocation would speedily follow. On the 5th of July patient had what was thought to be a fatal attack of suffocation, the countenance assuming a dark ash color, eyes staring, violent efforts at breathing, the air passages seeming closed, but after an hour the paroxysm passed away, leaving patient in a very easy condition.

On the 7th, at 8 o'clock p.m., he was being prepared for the night, by having his clothes changed, and was standing up, supported by his wife, when he suddenly asked to be laid down in his chair, and made the remark that he was dying, and in a moment he became relaxed and expired, without a struggle or a moan. Mrs. S. had, with great good judgment, given me permission to make such examination of the tumor as I desired; accordingly, on the next morning, assisted by Dr. Radmore, we removed the heart and arteries, trachea, and all the parts in connection with the diseased structure. The aneurism was of the arch of the aorta, and had ruptured its walls, discharging its contents and those of the heart, etc., into the left pleural cavity, filling that space with blood. The sternum was eroded, destroying its substance through, and about two inches below the top, so that when the least force was exerted it parted and exposed the peculiar appearance of bone that has undergone that destructive process. The tumor was of the sacciform variety, of great size, arising from the arch of the thoracic aorta. The sac was partially filled with one pint and a half of well organized clots, adhering firmly to the walls. The tumor had ruptured at a point under the top of the sternum, revealing an opening an inch in length, through which the blood had flowed into the cavity before alluded to. The aperture

* "Medical Examiner," vol. ix, page 783.

connecting the aneurism with the artery was large. The heart, arteries and tumor weighed five and a half pounds. The pressure upon the trachea and surrounding parts was great, the size of the tumor filling up and occupying the space above the arch of the aorta and upper part of the lungs, there being great displacement of those organs and vessels, *i. e.*, the trachea, innominate, left lung, etc., the abnormal position of the innominate artery being especially great. The case was one of unusual interest; the size of the tumor and the destruction of osseous parts as revealed at the post-mortem examination, renders it a valuable specimen of that class of tumors, for any private or public collection. Notwithstanding the suddenly fatal termination, there are strong reasons to believe that a curative process had been in progress for some time. The clots before alluded to were of a fibrinous character, concentric in their arrangement, and but for the fact that the greatest pressure of the tumor was upon the sternum, whereby erosion of that bone was induced, and the walls of the tumor diminished, it is reasonable to believe a cure might have been performed in time.

INTERESTING SURGICAL CASES.

BY J. H. MEARS, M.D.,
Of Monterey, Mexico.

A Case of Complete Intestinal Obstruction, Arising from Disease of the Sigmoid Flexure of the Colon and the Rectum, in which the Descending Colon was Successfully Opened in the Loin.

The present case, being an Italian merchant of this city, aged forty, robust, and not of very temperate habits, after suffering for several months under the treatment of different physicians of this city, his symptoms becoming extremely alarming and aggravated, applied to me, as a last resort, for medical treatment. He had no passage for nine days, and no pain or straining; the abdomen was greatly distended and tympanitic; pain was now felt in the situation of the transverse colon, and was much increased by pressure; at this point some bulging was observed. He described the pain as of a "twisting" character, and shooting down to the umbilicus. At short intervals the pain was aggravated, in violent paroxysms, accompanied with strong tenesmus, which continued about a minute, and then as quickly subsided. He vomited almost everything

which he took; the pulse was increased in frequency, full, strong and compressible; tongue coated with a thick pale fur, and not dry; throat moist. I do not give a detail of the treatment, which was of the ordinary description; suffice it to say that there was no lack of ingenuity in varying the remedies that were ordered. The colon-tube, passed up the rectum, on several occasions, always met with an obstruction about eight inches up; galvanism was tried by introducing one wire into the rectum and applying the other to the abdomen and spine, only exciting painful contractions of the abdominal muscles, without relieving the bowels. For sixteen days he bore up remarkably well against his complaint, but then began to sink so rapidly as to leave no doubt that he would die unless some extraordinary relief was obtained for him.

In this unpromising condition it was determined to open the descending colon in the loin, as recommended by Amussat. The urgent anxiety of his friends demanded that something should be done immediately, and at once the operation was performed by Drs. J. B. Mears, Maurico de la Garza, and myself. As the patient lay upon his back no indication of the precise nature or situation of the obstruction was observable. The abdomen was equally swollen on both sides, presenting everywhere the same elastic resistance to pressure; the sound, on percussion, generally clear, was duller as it approached the loins.

As the patient lay on his belly, no bulging was observable in the lumbar region of one side more than in that of the other; percussion elicited a rather duller sound on the left than on the right side. The patient being extended on a bed, with his face downward, a transverse incision was made in the left loin, beginning at the ridge which marks the external margin of the erector spinæ muscle, about two inches from the spine, and carried directly outward; this incision was five and a half inches long, and was situated a finger's breadth above the crest of the ilium; it passed through the skin and fat, nearly one inch in depth, down to the latissimus dorsi muscle; this muscle and the quadratus lumborum were now divided, to the extent of the incision of the skin; and a layer of fat, bounded on the inside by the external margin of the erector spinæ muscle, was brought into view. On dissecting this away, to the depth of half an inch, a thin, transparent

membrane was exposed; from the appearance of this membrane, which it was conceived might be the intestine, it was thought advisable to pass sutures through it, to retain it in its position, and subsequently to affix it to the edges of the wound. However, on penetrating it with the knife, a mass of soft granular fat started through the incision. A very large quantity of this fat was cautiously dissected away, and the finger was then introduced to search for the bowel, but no precise indication of it could be felt; the finger, when pressed upward, rested on the lower part of the left kidney; while downward it came in contact with the inner margin of the crest of the ilium. The wound being now of considerable depth, it was necessary to proceed with great caution, and clear away the fat, little by little, which, in consequence of the loose nature of the fat, was rather difficult, and occupied some time.

At length the bowel was brought into view, at the depth of about four inches—it was highly vascular—and having been cleared of fat, sutures were passed through it, and held by assistants. An incision, half an inch in length, was made into the bowel, and an immense quantity of high-colored fluid feces immediately escaped; the patient had been vomiting similar fecal matter during the whole of the operation, but this vomiting now entirely ceased, and he was relieved of all his symptoms; the opening of the bowel was fastened, by sutures, to the skin; a large flaxseed poultice was placed over the wound, and retained by a bandage passed around the body, and the patient enjoined to lie on the left side, to facilitate the escape of the feces. Scarcely two ounces of blood was lost during the operation.

The colon-tube, passed downward through the wound, or upward through the rectum, always met with an obstruction after it had passed either way about eight inches, and consequently about the situation of the sigmoid flexure; this obstruction could never be overcome, so that all the feces escaped through the wound, but without causing so much inconvenience as might have been anticipated from the existence of an artificial anus, and without the least interference with the patient's usual health, for he became, in a short time, as stout and strong as ever. Throughout there was some disposition in the wound to contract and close entirely, but after a time that inconvenience ceased, and is now apparently quite well.

I subjoin no remarks about the case, merely state it as it occurred, and should you deem it worthy a place in your *REPORTER*, please publish, as I consider it an interesting case.

Cæsarean Operation Successfully Performed.

During last month a Mexican confrere called upon me to assist him in a case of artificial labor. Upon our arrival we were informed that the child had probably been dead about twenty-four hours, and upon examination it proved to be the case. Dr. J. B. Mears, aided by a Mexican surgeon and myself, proceeded to the operation by applying the forceps, but was unable to effect delivery, in consequence of the monstrous size of the child's head and diminutive size of the pelvis. After a more thorough examination we coincided in opinion, and decided on immediate cephalotomy, as the only probable means of saving the woman's life; the head was punctured and the parietal bones taken away. The anterior posterior diameter of the pelvis was so much diminished, by a sacral exostosis, that we thought it would be more dangerous to the mother to take the child away by pieces than through an incision made into the abdominal cavity.

The abdomen was uncovered and a single incision made, commencing two inches above the umbilicus, passing on the left side down to within two inches of the os pubis, along the linea alba; with the nail of the thumb and the forefinger the peritoneum was slightly elevated, and an incision made, large enough to introduce two fingers of the left hand, between which the bistoury was passed above and below, to give the same extent of opening as that through the integuments. The uterus, being brought fairly into view, was laid open with a single incision, made by a convex bistoury, about seven inches in length, corresponding to the external opening through the walls of the abdomen; the child was seized by the feet and delivered, the hand introduced again into the uterus and the placenta and membranes taken away; this was done in less than five minutes; by the time the parts had been cleansed with a sponge, the uterus had contracted so that the opening through which the child passed appeared to be reduced to about two inches. Five sutures were used, to keep the edge of the wound in apposition, a piece of linen smeared with glycerine and carbolic acid laid over it, pads placed on either side of the abdomen, kept in place by a bandage,

and cold compresses applied to the whole abdomen, to be kept cool enough to prevent inflammation. Ordered an opiate at night; dressing not raised for four days; wound healed by first intention; washed and applied adhesive plaster. On the 15th day from the operation the patient was able to sit up, and in ten days after was walking about. The child, minus parietal bones and brain, weighed ten pounds. It is the first operation of this nature ever performed in this city.

HOSPITAL REPORTS.

JEFFERSON MEDICAL COLLEGE HOSPITAL.

CLINIC OF PROF. GROSS.

REPORTED BY FRANK WOODBURY, M. D.

During the coming winter it is our intention to furnish in these pages full details of all the important or specially interesting cases that may be made the subjects of clinical lectures by Professor Gross, giving, as fully as may be, his remarks upon differential diagnosis, with careful descriptions of peculiarities of treatment or operative procedures. These will be published by permission of the lecturer, and may be appropriately entitled, "Notes of Cases from the clinic of Professor Gross."

The inaugural lecture of the surgical clinic, for the regular winter course of 1877-78, was given by the Professor of Surgery, on Wednesday, October 3d, 1877, in the large and admirably arranged amphitheatre of the new hospital of the Jefferson Medical College, which, with a seating capacity of about seven hundred, on this occasion certainly contained more than three-fourths of that number of students. The first case shown was one of

Necrosis of the Tarsus,

that had been before the class during the preliminary course, the patient being a farmer, 36 years of age. Nearly five years ago he had sprained his ankle, and had never enjoyed the use of it since. Two years before he appeared at the clinic, the joint opened spontaneously, and discharged pus containing small pieces of bone; since then the opening had remained patent, and continued to discharge, from time to time, bony spiculae. His health was impaired, he had no appetite, and he felt poorly. Before performing any operation, it was decided to build up his general health by tonics, milk-punch, and nourishing food, which he had now been taking for about two weeks, with signal benefit.

This case was shown to illustrate the importance of preparing patients before submitting them to the ordeal of a surgical operation. It

was remarked that upon this, and the judicious after-treatment, depend the successful result, much more than it does upon brilliancy of operating.

Neuralgia of Testicle versus Varicocele.

Richard N., twenty-four years of age, a brass finisher, complained of a pain in the left testicle for four years. The organ was pendulous in a relaxed scrotum, and appeared somewhat enlarged. He came requesting an operation for varicocele.

Professor Gross remarked that fullness of the veins of the left testicle is a very common condition, owing to the absence of a valve in the left spermatic vein, at its entrance in the renal, although one is present on the right side, as was first demonstrated some years ago, by Dr. John H. Brinton, of this city. In addition to this natural predisposition, constipation of the bowels must be regarded as an active accessory cause, owing to the passage of the left spermatic vein behind the sigmoid flexure of the colon, where it is liable to be pressed upon by the contents of the tube. Varicocele is an enlargement, by dilatation and hypertrophy, of the plexus of veins lying upon the spermatic cord. Operation for its radical cure is called for when there is danger of atrophy of the testicle, or when there is constant distressing pain in the parts. Sometimes the patient's mind is so much affected by dwelling upon it that his general health suffers, and he is unfitted for his business. In the present case the pain was not constant, the testicle appeared healthy, and, although the large veins were filled with blood, there was no marked tortuosity of the vessels. This was not considered a proper subject for subcutaneous ligation of the veins, and the patient, it was believed, would be greatly benefited by hygienic and tonic treatment, with full doses of quinine. Although the pain was not distinctly periodical, it was regarded as mainly neuralgic in its nature. The patient was directed to avoid dancing, horseback-exercise, and everything that could lead to an accumulation of blood in the part, or stimulate the organ. The scrotum should be frequently bathed with cold water, and supported by a suspensory bandage. The bowels should have a daily evacuation. He was directed to take ten grains of quinine at bedtime, and the following prescription, to be taken three times a day:—

R. Quinæ sulphat.,	gr.ij	
Acidi arseniosi,	gr. ʒss	
Strychninæ,	gr. ʒss	
Extract aconiti,	gr. ʒ.	M.

Extirpation of Breast for Scirrhus.

Ann C., 49 years of age, unmarried, had noticed a hard lump in her left breast for about six months, which had steadily increased, and was now the seat of lancinating pains. The breast was enlarged, dense and resisting to the touch, and showed retraction of the nipple;

these signs being pointed out as characteristic of the disease. As soon as the nature of the growth is ascertained it should be removed by an operation, including in the portion removed the entire mammary gland. Thorough work should be made of it, for, although the diseased mass may not be larger than a walnut without its shell, if the breast be only partially excised the malignant growth is exceedingly apt to reappear in the remainder. In addition to this, search should be made for enlarged lymphatic glands along the border of the pectoral muscle and in the axilla, which are liable to become the seat of secondary growths. These diseased glands are sometimes very numerous, the lecturer having a similar case only a short time ago, from which forty-eight axillary glands were removed in the operation, some being, of course, quite small.

In performing the operation, ether was administered and the diseased breast was then included between two elliptical or curvilinear incisions, which were disposed so as to favor drainage from the lower angle of the wound on the left side, the gland being removed without stopping to tie vessels.

In seeking enlarged glands in the axilla, it should be remembered that it does not prove conclusively that they have absorbed, and become the seat of cancerous disease, as they may be enlarged from simple irritation, in the same manner that the glands of the groin may become enlarged from a sprain or injury of the lower extremities. At the same time, however, it is prudent to remove all such enlarged glands as can be found during the primary operation.

Two small vessels were tied, and, although there appeared to be no further disposition to bleed, the wound was directed to be left under a wet dressing for a couple of hours, before introducing the sutures, for fear that some points of oozing might subsequently show themselves. A hypodermic injection of morphia was administered, on recovering from the anæsthetic, and it was stated that the patient would be put on light diet, with anodynes and general antiphlogistic treatment, the parts being supported by a light bandage. Provided the patient be doing well—and she should be carefully watched—the dressing should not be disturbed for two or three days; but it was considered essential that the wound should be kept clean, and if there should be considerable discharge, a tendency to burrow might be obviated by changing the dressings frequently; indeed, it is nearly always necessary to introduce a tent, at the dependent angle of the wound, to insure free drainage.

Chronic Ulcer of Buttock.

M. N., 41 years of age, a farmer, was operated upon at this clinic on June 3d, 1876, for a large sinus in the right side of the perineum and buttock, which was laid open and scraped. Perfect success followed the operation, the wound healed kindly, and had given no

further trouble. He is now suffering from an unhealthy looking excavated ulcer upon the right buttock, over the tuberosity of the ischium, looking, as the lecturer remarked, "very much like epithelioma." The present complaint had existed nearly a year, and was not attributed to injury. The patient stated that he never had a chancre.

Professor Gross said that the position of the ulcer and its appearance led him to look upon it as due primarily to inflammation of the large mucous bursa, which always exists in this locality. No track of a sinus, or evidence of communication with the perineum or bowel could be detected.

A mucous bursa consists of a little sac or bag containing synovial secretion similar to that existing in the joints; and its function is to relieve friction and facilitate motion, it being interposed between contiguous surfaces, where muscles, tendons, or other structures have much range of motion. They exist in considerable number, about 140 to 150 naturally existing in the body, as has been demonstrated by Monro of Edinburgh. They are found in all parts of the body, and wherever they exist they are liable, from irritation by pressure or other causes, to become inflamed, even going on to the formation of abscess. Such an abscess may find vent for its contents by ulceration, as in the present patient. In such cases the best treatment is to remove the disease by including it within two elliptical incisions, and allowing the parts to heal by union by the first intention.

Performing this operation, the patient being under the influence of ether, it was found that there was marked condensation of the tissues surrounding the ulcer, from infiltration by plastic deposit. In consequence, there was considerable oozing, and several good-sized vessels were divided. Acupressure was used, to stop the bleeding, the pins to be allowed to remain as long as necessary to accomplish the purpose. A hypodermic injection of one-third grain of morphia was given at once. Should fever arise in the case, it was stated that some simple antiphlogistic febrifuge would be given, containing tartrate of antimony and potassium, spirit of Mindererus, or sweet spirit of nitre, and quinine would be administered in repeated doses as an alterant. The diet should be unstimulating.

Case of Necrosis of the Humerus.

Katie W., 5 years of age, of Phoenixville, was operated upon last spring, at the College clinic, by Dr. S. W. Gross, for the removal of some dead bone from the shaft of the humerus. There was no antecedent history of injury, and no cause could be assigned by the parents for the disease.

The wound healed after the operation with the exception of several spots of ulceration. The arm was swollen, and there was considerable thickening of the bone and periosteum.

In order to discover whether these sinuses led

to diseased bone, ether was administered, and they were laid open with the bistoury, as, on account of the presence of the old cicatrix, the ordinary examination with a probe was insufficient. When there is dead bone imprisoned it should be removed by the surgeon, as the only remedy, for no matter how small it be, it keeps up irritation and discharge. It is never absorbed, and will remain for years, not infrequently leading to abscess, and therefore the proper plan is to cut down upon and take it away. The lecturer had removed, the same morning, from a gentleman from Texas, a piece of dead bone, hardly the size of a hickory nut, that had been imprisoned for thirteen years.

Proceeding as indicated, tying the vessels as they were divided, a small piece of bone scarcely half an inch long was discovered to be the cause of the mischief, and which it was

stated would have remained indefinitely without the aid of surgery. Water dressing was applied and the case directed to be treated on general principles, meeting symptoms as they arise.

Cystic Goitre.

A case of large cystic goitre, of three years' duration, was also exhibited. The patient was a colored woman, 55 years of age, married, and was anxious to have it removed. The tumor had never been the seat of any pain, and was only inconvenient from its size. The lecturer decided that the proper treatment was tapping of the large cysts and injecting iodine in solution, to secure obliteration of their cavities by adhesive inflammation. The woman was directed to return for operation.

EDITORIAL DEPARTMENT.

PERISCOPE.

The Treatment of Pulmonary Cavities.

The following important suggestions are from an article in the *London Medical Times and Gazette*, by Dr. R. D. Powell, of the Brompton Hospital for Consumptives:—

In the treatment of secreting cavities, the objects we have in view are (1) to lessen secretion, (2) to promote evacuation of what secretion is formed, and (3) to disinfect such cavities. Counter-irritation, of little use, I believe, whilst cavities are still forming or extending, is of great service in these cases. When we remember that in chronic excavation of the lung we almost invariably get an intimate union of the two pleural surfaces, and an anastomosis of their vessels, we may see why the application of a blister externally may affect such cavities. As a matter of fact, they do influence them most decidedly. Strong iodine applications (two drachms to the ounce), or flying blisters, or perhaps a blister kept open for a few days by the use of savin ointment dressing, are the forms of counter-irritation suitable to different cases. Under their use the cough and expectoration frequently diminish. Acids and astringent iron tonics and oil are needed. Sedative cough mixtures are directly contra-indicated in these cases, except for the purpose of giving rest at bedtime. It is in these cases the inhalations are most useful; for, firstly, there being no actively spreading disease present they can do no harm; secondly, we can, by their use, render less noxious the pus that bathes the surface of the cavity, and which is apt to become inhaled during the effort of expectoration into distant parts of the lung; thirdly, inhalations

help expectoration; fourthly, there can be little doubt that appropriate inhalations sometimes have a healing or an alterative effect upon the internal surface of the cavity.

The best substances for inhalation are—iodine (vapor *iodi*, B. P.), only to be used occasionally and for a few days together; carbolic acid (glycerine of carbolic acid, one drachm to two drachms, to half a pint of hot water); or tar water (liq. carbonis detergens, one drachm, to half a pint of water): useful disinfecting and, except iodine, somewhat sedative inhalations, that may be employed two or three times a day. They may be taken very well from a deep jug, or a Nelson's inhaler, with the sponge removed. Friar's balsam, tincture of larch, turpentine, etc., may be similarly employed from time to time. Perchloride of iron or other astringents may sometimes be used with Siegle's spray apparatus; but I have myself failed to find atomized astringents useful in these cases, and doubt if they penetrate so far as vapors inhaled in the ordinary way. Salt air, and perhaps especially sea-shore air, containing more or less salt spray, is usually beneficial to these patients; some liberal diet is, of course, necessary.

Cases of active or ulcerous cavities may require at first the free administration of alcoholic stimulants; a somewhat liberal allowance of wine is also subsequently needed, with nutritious support and abundance of good air. The active or ulcerous cavities tend to become endemic in over-crowded wards, and their occurrence should always lead us to look to sanitary arrangements, for their pathology strongly suggests their erysipelatosus nature. It cannot, indeed, be too carefully remembered, in the treatment of patients with phthisical affections of the lungs, that they have internal

wounds or sores, which, unlike most other internal affections, are accessible to the contamination of foul air, and that thus erysipelatous processes may be readily set up, which are too apt to be recognized only as "intercurrent pneumonias" or other local inflammation.

Medicinally these cases may be combated by quinine, internally, or in some cases full doses of perchloride of iron, or sedative inhalations containing tincture of benzoin and opium; hyoscyamus and chloric ether, carbolic acid and opium, etc., are useful. Ipecacuanha wine, administered as spray, with Siegle's inhaler, is worth a trial, but patients suffering from this condition of cavities are often too prostrate to bear the fatigue of inhaling. If the more active general symptoms should lessen, but a blood-stained and copious expectoration still leads us to infer that the walls of the cavity are hyperæmic, I am convinced, from observation, that the best treatment is to apply a blister over the region of the excavation, and to keep it freely discharging for several days, by means of savin ointment dressing. I have seen active symptoms completely subside under this treatment—which is, however, somewhat severe and painful—and the cavity subsequently contract, the expectoration, from being abundant and sanguineous, becoming scanty, viscid, and apparently consisting of bronchial mucus only.

The Therapeutic Uses of Compressed and Rarefied Air.

A recent number of Volkmann's *Vorträge* contains a lecture on this subject, which we take in part from an English journal:—

The diseases in which this method of treatment have been found most efficacious are phthisis and a phthisical disposition, chronic bronchitis, emphysema, asthma, and compression of the lungs by pleuritic adhesions. It has been recommended by Waldenburg, in stenosis of the larger air passages, and also in certain diseases of the heart. In phthisis it is possible, by means of compressed air, to increase the capacity of a narrow thorax, and to strengthen the weak respiratory muscles by means of the exertion used in inspiring rarefied air. It is also probable that the compressed air may help to relieve the congestion of inflamed parts of the lung, and that the rarefied air, by increasing the depth, and perhaps the number of inspirations, may improve the general nutrition of the lung by rendering the circulation in it more active. According to Dr. Biedert, those cases of phthisis in which the irritating property of the inspired air makes itself most felt, especially those in which there is much fever, are the least suited to the pneumatic treatment; cases, also, in which there are large areas of consolidation are unsuitable to it. Moderate hæmoptysis is no contra-indication to the use of compressed air. As far as we can judge, however, from Dr. Biedert's statements, the pneumatic method appears rather to alleviate the symptoms in

phthisis than to exert a definitely curative action on it, and it seems more probable that it will be of value in strengthening the chest muscles, and opening out the chest in persons with a phthisical predisposition, than in the actual disease itself.

In either case the method employed is the same. The sitting begins by the patient inspiring compressed air alone, and then, when the irritation and cough which it has set up diminishes, he inspires rarefied air, and the sitting is ended by a few inspirations of compressed air. The compression of the air varies between $\frac{1}{2}$ and $\frac{1}{3}$ atmosphere, and the rarefaction from $\frac{1}{12}$ to $\frac{1}{8}$ atmosphere, and the number of inspirations at each sitting ranges from twenty to sixty. The sittings take place once, or at the utmost twice a day, and in the commencement of the treatment the medical man must always be present to superintend the use of the apparatus. Later on this duty may be handed over to an assistant, or to the patient himself, provided he be intelligent; the physician only exercising a general supervision from time to time. In the use of compressed air, it has been found advisable not to exceed a pressure of 1 atmosphere; and the patient should be directed, as soon as he has overcome the initial irritation, to inspire slowly, and as deeply as possible, without using any force. On the other hand, when he breathes rarefied air, he must inspire vigorously.

In bronchitis this treatment renders expectoration more easy, stimulates the lung, and improves the circulation in it; and since the compressed air penetrates further into the lungs than any other local application, it is probable that it reaches diseased parts which would be inaccessible to any other direct treatment. The ordinary pneumatic treatment of bronchial catarrh consists in inspiration of compressed air at the same pressure as in phthisis. The use of rarefied air is only indicated if we wish to stimulate the lung more vigorously, or to promote expectoration; and it must be followed, if there is much catarrh, by a few inspirations of slightly compressed air in order to remove the temporary congestion of the lung, which Waldenburg has shown to be produced by a rarefied air. In all cases excessive irritability of the lungs, or any aggravation of existing mischief, is an indication for reducing the pressure, or temporarily stopping the pneumatic treatment. In emphysema the treatment begins with short sittings, in which from ten to twenty inspirations of compressed air ($\frac{1}{2}$ to $\frac{1}{3}$ atmosphere) are taken and repeated after an interval of ten minutes. On the second or third day the really curative treatment of the disease, as Dr. Biedert calls it, commences. Instead of breathing in compressed or rarefied air, the patient is made to expire into an atmosphere of rarefied air, the number of expirations ranging from thirty to fifty once or twice a day, and depending on the sensibility of the patient's lungs to the irritation of the air. The theory of action of

this method is, that the rarefaction within the chest causes a diminution in the size of the thorax, and also of the lungs, owing to increased pressure on their outer surface; that the same pressure elevates the abnormally depressed diaphragm; and that the blood is sucked, as it were, into the tissues of the lungs, so as to counteract the anæmia due to the emphysema.

In the so-called "bronchial asthma" the indications for the pneumatic treatment are the same as those in bronchial catarrh. During the actual asthmatic attacks, inhalation of compressed air appears to be quite useless. In two cases of compression of the lung by pleuritic adhesions, Dr. Biedert has succeeded in raising the vital capacity in one from 2600 to 3500 cubic centimetres, and in the other from 2200 to 2600 cubic centimetres. The patients inspired compressed air at pressures up to $\frac{1}{4}$ atmosphere, from thirty to fifty inspirations being taken at each sitting. The value of the pneumatic method appears to be as marked in some forms of heart disease as in any of the diseases we enumerated above. According to Waldenburg, affections of the mitral valve are those which are most benefited by it; and Dr. Biedert refers to a striking instance of disappearance of dropsy, and general improvement, under the influence of compressed air, in a case of mitral stenosis and incompetence. Rosenstein, also, in his article on Valvular Diseases, in the sixth volume of "Ziemssen's Cyclopædia," is equally favorable to this treatment.

The contra-indications to the use of compressed air are degeneration of blood-vessels and an apoplectic tendency; and to that of rarefied air, especially in the form of inspiration, pulmonary hemorrhages. The whole method is unsuited to active inflammations in the lungs as well as to advanced bronchial dilatation.

The Germ Doctrine and Septicæmia.

Dr. M. A. E. Wilkinson, President of the British Medical Association, in his address, spoke of the germ doctrine and its applications. He said:—

We will inquire how it stands with this doctrine in regard to traumatic septicæmia and pyæmia. You are all aware that foul, ill-conditioned wounds are attended with severe, often fatal, symptoms, consisting essentially of fever of a remittent type, tending to run on to the formation of embolic inflammations and secondary abscesses.

The notion that septicæmia is produced by bacteria, and the rationale of the antiseptic treatment which is based thereupon, is founded on the following series of considerations:—

1. It is known that decomposing animal substances, blood, muscle, and pus, develop, at an early stage of the process, a virulent poison, which, when injected into the body of an animal, produces symptoms similar to those of clinical septicæmia. This poison is evidently

not itself an organism; it is soluble, or at least diffusible, in water, and it is capable, by appropriate means, of being separated from the decomposing liquid and its contained organisms. When thus isolated, it behaves like any other chemical poison; its effects are proportionate to the dose, and it has not the least power of self-multiplication in the body. To this substance Dr. Burdon-Sanderson has given the appropriate name of pyrogen. It is the only known substance which produces a simple uncomplicated paroxysm of fever, beginning with a rigor, followed by a rise of temperature, and ending (if the dose be not too large) in deferescence and recovery.

2. We know further, from the evidence I have laid before you, that decomposition cannot take place without bacteria, and that bacteria are never produced spontaneously, but originate invariably from germs derived from the surrounding media. We are warranted by analogy in regarding pyrogen as the product of a special fermentation taking place in decomposing albuminoid mixtures, but we cannot name the particular organism, nor the particular albuminoid compound which are mutually engaged in the process.

3. In the third place, we know that when a wound becomes unhealthy, as surgeons term it, the discharges become offensive, in other words, decomposed, and when examined under the microscope they are found to swarm with organisms resembling those found in all decomposing fluids. Meanwhile the patient becomes feverish, and suffers from the train of symptoms which we call septicæmia.

It is a natural inference that what takes place in decomposing blood or muscle in the laboratory, takes place also in the serous discharges and dead tissues of the wound. These become infected from the surrounding air, or from the water used in the dressings, with septic organisms; on that follows decomposition and the production of the septic poison, or pyrogen; the poison is absorbed into the blood, and septicæmia ensues.

It was the distinguished merit of Lister to perceive that these considerations pointed to a means of preventing septicæmia. He argued that, if you could prevent the access of septic organisms to the wound, or destroy them there, you would prevent decomposition, prevent the production of the septic poison, and thus obviate the danger of septicæmia.

How the Chinese Make Eunuchs.

The following curious description is given by a writer in the *Lancet*:—

The operation is performed at an establishment maintained for the purpose, immediately outside one of the palace gates. The operators are known as "knifers," and they contrive to keep the trade in their own families. For each castration, and the subsequent care of the case, they receive the equivalent of about £1 16s. sterling. When about to be operated on, the

patient is placed in a semi-supine position, on a broad bench. One man, squatting behind him, grasps his waist, and one man is told off to each of his legs. Bandages are fastened tightly round the hypogastric and inguinal regions, the penis and scrotum are three times bathed with a hot decoction of pepper-pods, and the patient is finally, *if an adult*, solemnly asked whether he will ever repent. If he appears doubtful, he is unbound and dismissed, but if his courage has held out, as it usually has, all the parts are swiftly swept away by one stroke of a small sickle-shaped knife. A pewter plug is inserted into the urethra, the wound is covered with paper soaked in cold water, and is firmly bound up. The patient, supported by two men, is kept walking round the room for two or three hours, after which he is permitted to lie down. For three days he gets nothing to drink, nor is he allowed to pass urine. At the end of this period the dressings are removed, and the plug is taken out. The parts generally heal in about one hundred days, when the patient is inspected by an old and experienced eunuch, in order to make sure that the mutilation is complete. About two per cent. of all cases prove fatal, some by hemorrhage and some by extravasation. For a long time after the operation there is nocturnal incontinence of urine.

REVIEWS AND BOOK NOTICES.

NOTES ON CURRENT MEDICAL LITERATURE.

—"How Long Ought Women to Stay in Bed After Delivery?" This is the title of an article in the *Proceedings* of the Medical Society of the County of Kings, September 18th, 1877, by Dr. H. J. Garrigues. He differs with Dr. Goodell in the opinion that an early "getting up" is advisable. Dr. Goodell, in a late paper, adduces the following reasons in favor of encouraging women to get up early: First. Labor being a physiological process, it should not be made to wear the livery of disease. Second. The upright position excites the uterus to contract, and lessens the amount and duration of the lochia. Third. Uterine diseases are hardly known among the nations whose women early leave their beds. Fourth. Experience has shown him that convalescence is rendered far more prompt and sure. Dr. Garrigues briefly answers these as follows: First. The women of our time are not in a normal physiological condition. Second. Flexions are liable to be brought about by the weight and flaccidity of the womb before the contractions impede it, and the amount of lochia is also much

diminished by injections of carbolized water into the vagina. Third. We do not know much about the condition of the uterus in ancient, or far remote people. The doctor also calls attention to the fact that diseases of the uterus are much more common in the lower classes, who cannot afford to lie long in bed, than in the upper walks of society.

—"Some Hints Regarding Uterine Supporters," by Clifton E. Wing, M.D., Boston. The author justly calls attention to the importance of properly using the pessary—that it is often a matter requiring attention for weeks and months—so that good and not harm may be done the woman. He tells us that this fact cannot be properly appreciated by the profession, or else the specialist would have fewer calls from those expecting to have a supporter applied, but who leave the office in a few minutes and have no further trouble about the matter. No doubt doctors often fail to appreciate the fact that when a uterus has been out of its proper position for a length of time the tissues accommodate themselves to the new position, and that the complete replacement must be gradual. The writer illustrates his points with two cases, and they serve to show how much attention must be given to the minutiae when pessaries are used. The true use of such an instrument is, like that of the surgeon's splint, to so support the organ that when it is removed it will continue in place.

—"Retention in Utero of the Dead Fœtus, Considered Particularly with Regard to its Effects on the Mother." By G. W. H. Kemper, M.D., of Muncy, Ind. Some of the conclusions may briefly be stated as follows:—Often deleterious influences may be exerted, whether the membranes are intact, and whether the fœtus has undergone putrefaction or not. The fœtus may be retained in a state of complete putrefaction for an indefinite time, and no ill consequence result therefrom to the mother. There is no evidence to show that a living fœtus is injured by the presence of a dead one in the same uterus. There is no positive means for deciding that a dead fœtus exists in the uterus conjointly with a living one. In single conceptions, when the fœtus perishes, the symptoms, as a rule, clearly indicate the fact. If no ill results follow, it is best to trust the case to nature. If the health of the mother suffer, or if the case be protracted beyond the term, and give rise to inconvenience, the os should be dilated and the contents removed.

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THE HEALTH OF ARMIES.

The recent frightful mortality in the Russian army forcibly illustrates the importance of sanitary science to war. It is a most unfortunate organization of an army which places the surgical staff in a position so subordinate that they are little better than civilians, and deprives them of that military authority which is essential in order to secure prompt obedience from the rank and file, and influence in the councils of the higher officers. Again, the disregard of sanitary regulations of the simplest character, by the men of the Russian army, would seem to point either to inability of the medical staff to enforce such regulations, or else to an ignorance or carelessness of them. No doubt the first is the case.

We find, in the *Lancet*, that General Kossinsky also comments very severely upon the imperfection of the service for the transport of the wounded to the hospitals in the rear. The provision of ambulance wagons, he states, has proved wholly incommensurate to the wants of the forces, and, in consequence, it has been necessary to employ largely country carts for the purpose. The use of these carts, particularly when drawn by bullocks, adds immeasurably to the torture of the wounded, and proves most detrimental to their future state. Prince Khilkow writes much in the same strain to the *Moscow Gazette*, from the Caucasus, of the transport of the wounded there, and his observations lead to the suspicion that the great success of treatment of the wounded in the ambulances of the Caucasus, may be in part explained by an unusual proportion of slightly wounded among them. It is to be inferred that few of the seriously wounded would survive a several days' journey in country carts among the mountains. Prince Khilkow writes of wounds becoming gangrenous from the impossibility of giving them due care during such journeys. Again, the medical staff of the army on the Danube complain bitterly of their being too often kept in ignorance of the points where it

may be necessary to establish hospitals and depots, in view of an engagement. Thus it happens that they are apt to be late upon the spot where their services are most needed, or to be sent away at the last moment.

It would appear, indeed, as if the unexamined preparations made for the aid of the sick and wounded in the early stages of the war, and which, so far as voluntary associations are concerned, are still being continued, have been, and are being, rendered largely abortive in the immediate field of action, from the want of some responsible controlling power, and of a faculty of improvising means to meet the exigencies of the campaign as they arise. It reflects no discredit on Russia that her provision for the transport of the wounded should have fallen short of the needs of her recent struggles in the Balkans and the mountains of Armenia, but the letters of General Kossinsky and Prince Khilkow betray an apparent want of fertility of resource in meeting medical exigencies as they arise, which we are unable to explain, unless on the supposition that, as in the early history of the Crimean war, individual effort is repressed by an effete bureaucratic rule.

No doubt, with every month improvement will be manifest, but meanwhile a decimating mortality prevails, which could largely have been prevented.

NOTES AND COMMENTS.

Properties of the Human Gastric Juice.

The *Press and Circular* says M. Charles Ricket has been experimenting upon the patient on whom Prof. Verneuil recently performed the operation of gastrotomy. According to his researches the acidity of the gastric juice is equivalent to 1.7 grammes of hydrochloric acid to 1000 grammes of fluid. This acidity increases a little at the end of digestion. Wine and alcohol also increases it, but cane sugar diminishes it. It tends to return to its normal acidity after the introduction of acid or alkaline matters. The mean duration of digestion is from three to four-and-a-half hours, and the food

does not pass gradually out of the stomach, but in masses. According to four analyses, after a modification of Schmidt's method, free hydrochloric acid exists in the gastric juice; and altogether this secretion appears to consist of one part of lactic acid to nine parts of hydrochloric acid, the former of which is free in the gastric juice. The nature, therefore, of the free acid in the stomach seems almost solved, and it may be said that in every 1000 grammes of the juice there are 1.53 grains of hydrochloric acid and 0.43 of lactic acid.

Influence of Posture upon Cardiac Murmurs.

The *Lancet* observes that there is no doubt that the position of a patient has much to do with the comparative intensity of endocardial murmurs. It has been several times pointed out that a murmur audible when the patient is recumbent is almost, if not entirely, lost in the erect posture. This effect of posture seems to tell more upon mitral than upon aortic bruits, but all cardiac murmurs seem more or less influenced by it. The subject has recently been studied by M. Cuffer, of Paris, who has come to the following conclusions: That all intra-cardiac bruits, of whatever nature, are modified by the patient passing from the horizontal to the vertical position. That they are all diminished in intensity in the erect posture. That this diminution is partly due to change in the form of the heart, and partly to alterations in the arterial tension, by which the number and force of the cardiac contractions may be altered. Further, that all murmurs are intensified in the horizontal posture, some even being only produced under this condition. He adds that inspiration increases the intensity of a murmur.

Experiments with the Turkish Bath.

Some interesting observations were related at the last meeting of the British Medical Association, by William James Fleming, M.B. (Glasgow). These experiments were performed by the author upon himself, and consisted of observations on the effect of the Turkish bath at temperatures of from 130° Fahr., to 170° Fahr., upon the weight, temperature, pulse, respiration, and secretions. The results showed that immersion of the body in hot dry air produced loss of weight to an extent considerably greater than normal, amounting, on the average, to a rate of above forty ounces an hour. This was accompanied by an increase in the temperature

of the body and a rise in the pulse rate, with at first a fall and then a rise in the rapidity of respiration. The amount of solids secreted by the kidneys was increased, and coincidentally the amount of urea. The sweat contained a quantity of solid matter in solution, and among other things a considerable amount of urea. The most important effect of the bath was the stimulation of the emunctory action of the skin. By this means the tissues could, as it were, be washed by passing water through them from within out. The increased temperature and pulse-rate pointed to the necessity of caution in the use of the bath when the circulatory system was diseased.

On Echinococcus Disease.

On this subject a German physician, Dr. Neisser, has produced a little treatise of high value. He gives a careful analysis of 983 cases of hydatid disease, and supplies references to all of them. The table showing the distribution of hydatids throughout the organs of the body is especially interesting. The proportion of preponderance of liver cases, 45.765 per cent., closely corresponds with those furnished by Davaine, who found 165 out of a total of 373, and by Cobbold, who found 161 in 327. Taken together, the French and English cases, 700 in all, make the proportion of liver cases 46.4 per cent. In like manner, there is a pretty close correspondence between the tables of all three authors, as regards the proportion of bone cases, so to say, and of cases affecting the organs of circulation.

Distinctions between Croup and Diphtheria.

In the last volume of *Guy's Hospital Reports*, Dr. Hilton Fagge and Mr. Lamb write upon Diphtheria and Croup, analyzing a large number of cases, and arriving at the following cautious conclusions:—

"We find that the attempt to separate from diphtheria a membranous croup in which the fauces remain entirely free from false membrane is beset with difficulties. The cases (which must, then, be called cases of diphtheria) in which the air-passages are attacked, the palate and tonsils being but slightly affected, occur almost exclusively in children, and they are seldom, if ever, infectious; whereas pharyngeal diphtheria is highly infectious. But when one has once admitted that the different forms of diphtheria present different degrees of infectious-

ness, and that each of them occurs with special frequency at a particular period of life, one is debarred from insisting on the sporadic character of membranous laryngitis, and the fact that it never arises in the wards of a general hospital is proof that it is distinct. It is otherwise if we allow that the non-specific, simply inflammatory, affection may be attended with the formation of false membranes, even in the fauces. Such a view does away with the very improbable supposition that laryngeal diphtheria differs from the ordinary form of the disease, in being peculiar to children, and in possessing little or no infectiousness, and I think commends itself to us on other grounds also.

Puerperal Convulsions.

Dr. Kidd, of Dublin, remarks, in a recent address—When you have convulsions setting in after labor, and where there is not much coma, I believe that anæsthetics are peculiarly useful. Whether the anodyne be an opiate or a subcutaneous injection of morphia, I believe that that line of treatment is most useful. On the whole, if I were to sum up my practice, I think that, in certain rare cases, where you have a hot face, throbbing carotids and bounding pulse, you may bleed with advantage; but the cases in which bleeding can be practiced with advantage, are very few indeed. If you have consciousness perfectly restored, anæsthetics are useful. If there be complete stupor, and the fits are going on, avoid anæsthetics, and try hard purging and emptying of the uterus. In convulsions occurring after delivery, anæsthetics are peculiarly useful, especially chloral.

Spirits of Mindererus in Dysmenorrhœa.

A correspondent of the *British Medical Journal* praises this agent in painful menstruation. He observes: When it has succeeded in my hands, there has generally been a physical condition, and that alone, to account for the pain; while, unfortunately, we know that by far the most frequent cause is purely anatomical and mechanical, and that then nothing short of an operation can afford relief. At times I have employed chloroform by inhalation, or have given it internally in the form of chloric ether, and have found it quite as serviceable as the liquor ammoniæ acetatis; but all means proved more or less unsatisfactory, and I consequently resorted to the old-fashioned treatment of the

warm bath, and continued to prescribe this in preference to anything else, finding it the most effectual of all remedies in affording relief from the extreme pain sometimes present, while it is occasionally not less effectual in directly causing the discharge to appear. It is, in fact, both palliative and remedial in its effects.

Coffee as an Antidote to Strychnia.

Dr. Attilio Lelli having met with a case in which a large dose of strychnia was administered in coffee without fatal consequences, was led to institute some experiments to determine whether it possessed an antitoxic power against this drug. The animals employed were rabbits, and by comparative trials he found that a dose of five centigrammes proved fatal in a short space of time; when the same or a larger dose was given in a very strong infusion of coffee, he found that the coffee either acted as a complete antidote in preventing the poisonous effects of the strychnia, or that it materially diminished the violence of its action. The details of the experiments are given in the *Revista Sperimentale di Freniatria*, quoted in the *Lancet*.

Tupelo Tents.

The root of the tupelo tree, indigenous to the United States, is being used with success by various obstetricians, for dilating the os uteri. It is said to be superior for this purpose to sea-tangle, as its power of absorption is greater; it is as light as a cork, and its fibre is fine-grained, capable of being made very smooth, and, therefore, easily introduced.

CORRESPONDENCE.

On Diphtheria.

ED. MED. AND SURG. REPORTER:—

The accustomed reader of medical journals of the present day cannot well avoid noticing the unusual amount of matter now being written upon the subject of diphtheria. The conclusion would naturally arise, in such case, that this had become either a very common disease, or one about which there exists great difference of opinion. Whether the former or latter be the true solution, it must be the conceded duty of each one having such cases under his care to give his experience in the treatment, through the medical journals. So, in accordance with such convictions, I will offer my mode of treatment. During the past twelve months scarcely a family in this whole section

of country has escaped this fearful disease. I have had as many as half a dozen cases in one house at the same time, and have used almost every form of treatment. During the prevalence of this epidemic, I have had under my charge about two hundred cases. I will give the particulars of only one case, which will fully illustrate the advantages of my mode of treatment.

March 16th, 1877, I was called to see a case, age about eight years. I diagnosed at once a genuine case of diphtheria, and put him on the following, viz.: chlorate of potash, sulphite soda and glycerine internally; also sulphas quiniae as a tonic and stimulant, and as a local application equal parts of tincture iodine and glycerine. This plan I have found to succeed in a large majority of cases, but in the present case, in spite of my perseverance with the above course, in combination with other minor points, I was somewhat nonplused to see my case gradually growing worse. The membrane in the fauces, pharynx and nares at this time was quite extensive; so at this juncture I concluded to make a change in the local treatment, which consisted in the substitution of fluid extract eucalyptus globulus instead of the iodine and glycerine. Imagine my wonderful surprise, on the first application of the eucalyptus globulus, to see large flakes of membrane readily peel off, and the same result on each subsequent application; and in a few days I had the pleasure of seeing my little patient convalescent. Since using the eucalyptus globulus in the above case, I have tested its powers in quite a number of other cases, and can heartily recommend its use to others. In some cases I use it as a mop, with a soft piece of sponge, in others simply as a gargle. Yours sincerely,

J. E. MASSEY, M.D.

Fort Mills, S. C.

Sloughing of the Intestine.

ED. MED. AND SURG. REPORTER:—

Having had a very singular and interesting case I concluded to send a report of the same to you.

CASE. Sloughing of about twenty-six inches of small intestines, passed per rectum and recovery. Circumstances as follows:—

Was called to see Mr. Israel Ferguson, of Howell, Michigan, aged 77, Aug. 23d. He had suffered during the day with severe rigors, and gradually fever came on, with vomiting and peculiar odor of breath (not stercoraceous, however). Pain and great tenderness, with swelling, more or less tympanitic, in region of ilio-caecal valve; great thirst, no movements from bowels. Continued in this way until about the 29th, when symptoms of collapse came on, with almost imperceptible and intermitting pulse. Gave ice freely from commencement, with quinine, and a mercurial alterative; used turpentine and camphor stupes on bowels continuously. When the symptoms of collapse came on gave milk and whisky

every hour, and about five grains of quinine every two hours; also beef tea and libitum.

About September 2d, he commenced to improve. Bowels moved, pain and tenderness in region of ilio-caecal valve gradually subsided; vomiting ceased, and odor of breath became natural; symptoms of collapse passed off; pulse became regular, soft and full. Continued to improve till September 19th, when he was taken with pain in the lower part of bowels; pain continued until the morning of the 20th. When he went to stool it was ascertained that something protruded from the rectum, about one inch, which was pulled away by his daughter, who also immediately summoned me. Found, upon examination by myself and two other physicians, that it was, as stated above, about twenty-six inches of small intestine, in partially disorganized condition. Suppose it must have occurred by invagination of small intestine into the large, followed by inflammation, strangulation and sloughing, with union of healthy parts at same point. At date of present writing the patient is doing well, and having natural movements from the bowels. I have preserved the piece sloughed, for the examination of any and all who may wish to examine it.

Howell, Michigan.

C. V. BEEBE, M.D.

Pessaries in Uterine Displacements.

ED. MED. AND SURG. REPORTER:—

In gynecological practice there are three principal modes of treatment: general, including tonics etc.; local, such as applications of caustics; and mechanical, or applying pessaries to restore and retain dislocated organs; and whoever discards wholly any one of these three methods, materially limits his usefulness. What treatment but the mechanical would have benefited the following case:—

Miss E. P. B., aged 19, just before last Christmas, while standing on a ladder and attempting to reach as far as possible, felt a giving way in the pelvis. Always previous to this time her menstrual periods had been passed so easily as to give her little or no trouble. The three following periods kept her in bed three days each, with excruciating dysmenorrhœa, and a dejection from the bowels put her into agony for about four hours; any attempt at straining produced a feeling as if all the pelvic organs would be forced into the world.

When the patient came under my care a digital examination disclosed the os uteri at about its normal height, but pointing to the symphysis pubis, and behind was a hard lump, probably the fundus uteri. To introduce the uterine probe to the fundus, it was necessary to apply it with the convexity of the curve toward the patient's front, thus showing that we had to deal with retroversion of the womb. The womb having been displaced by accident, and not by disease, we hoped to relieve in a short time, and were not disappointed. Staufer's pessary for retroversion was applied, which restored the organ to its place and retained it

there three months, during which time the patient felt as well as ever. The pessary was then removed, and to the present time not one bad symptom has returned, and the patient and her friends feel confident that she is permanently cured.

Of pessaries I have used six kinds, and am confident that Staufer's is far superior to any others with which I am acquainted. If the case demands mechanical treatment his instruments will do exactly what is claimed for them. He also allows the physician to make a free exchange of any hard rubber part until a perfect fit is obtained.

S. L. CHASE M.D.

Colchester, Conn.

Extensive Scalp Lesion.

ED. MED. AND SURG. REPORTER:—

Saturday evening, August 11th, 1877, Willie P. aged 11, healthy, family history good, fell out of a wagon on the doubletree of the horses; he caught hold of the dash-board, and as his head was appearing above it one of the horses kicked him on the back of the head; he fell and was dragged about 150 yards.

I saw him in about three-quarters of an hour after the accident. Found him conscious, a wound extending from an inch and one-quarter below the occipital protuberance to the coronal suture on the one side, and within two inches on the other; lifting this circular flap it showed that the scalp was loosened from the calvarium as far in front as the superciliary ridge. There was a denudation of the occipital bone to the extent of an inch and one-half square, the periosteum being turned up, forming a flap. Hemorrhage considerable; skull not fractured.

Dr. W. H. Gibbon assisted in dressing the injury. We shaved the head, using the suture and adhesive strips. Ordered the warm water dressing, morphia sulph., to alleviate pain, etc.

Tuesday, 14th. Boy in good spirits, rested well, but much disfigured, eyes black and swollen entirely shut. Made an incision over right eye, evacuating five or six oz. of sanguineous fluid, introducing a tent to keep it open. Continued warm water dressings, medicated with tinct opii., quinia sulph, in half gr. doses, etc.

Thursday, 16th. Boy doing well, appetite good, no indications of erysipelas, cerebritis etc. Swelling not so great. Suppurating.

September 15th. Boy well; small cicatrix, caused by incision on forehead.

Respectfully

TOM M. THROCKMORTON, M.D.

Derby Iowa Oct. 1st, 1877.

—The *Times'* Bucharest special says: "George Lamson, an American surgeon, now attached to the Russian Soldiers' Relief Society, who served in the ambulances during the Franco German and Servian wars, has arrived at Bucharest."

NEWS AND MISCELLANY.

Tattooing Syphilis.

A striking example of the spread of syphilis from secondary lesions came to notice in this city recently. It was noted at the Philadelphia Hospital, some time ago, that a number of patients who had been brought to that institution suffering with syphilis had been inoculated with it through the process of tattooing. Shortly afterward it was ascertained that between two and three hundred persons at Reading, Pa., had been similarly inoculated, and that it was the work of a tramp named James Kelly, more familiarly known as "Kelly, the Bum." Measures were at once taken by the police authorities of both cities to insure the arrest of the man. He freely acknowledged that he was in the tattooing business, and that he had pursued his calling at Reading. He most positively denied, however, any intention of injuring any one, and produced the paraphernalia used in the tattooing, a number of needles and a quantity of India ink, stating that he followed it as a means of livelihood. Dr. F. F. Maury examined Kelly, and found that he was afflicted with the disease, and that in plying his vocation he would put the needles in his mouth, which was filled with sores, in order to wet them preparatory to use, and by this means had innocently inoculated the persons who had engaged him to perform the operation.

Personal.

—Almost everybody has forgotten about the blue glass craze, but Dr. Wilkins, of the Napa Insane Asylum, California, says that some of his patients read about it and thought it might benefit them. So he had windows fitted with blue glass, for converts to the doctrine, and he has reason to believe that in several cases there were most salutary results. He is careful to say, however, that he feels inclined to attribute this improvement in the condition of the patients to the influence of the mind rather than of the glass.

—Dr. Rothrock, of this city, has been appointed botanist to the Woodruff scientific expedition. We understand he will accept.

—There was a fatal case of sunstroke in Aurora, Ill., on Tuesday, the 2d instant. The thermometer stood at 90° in the shade at the time.

OBITUARY.

DR. JOHN RODMAN PAUL

Died at his residence, No. 908 Pine street, on Saturday, October 6th, at the advanced age of seventy-six years. For many years he practiced his profession in the southern part of the city, being located on Pine street above Second. He, however, retired from active duty about thirty years ago. Up to the

time of his death he was an inspector of the County Prison, and was also largely connected with the cotton mills of the Washington Manufacturing Company, at Gloucester. He was a trustee of the University of Pennsylvania, and treasurer of the College of Physicians.

DR. WILLIAM MASON TURNER,

Aged forty-one years, died at his residence, in this city, No. 1428 North Seventh street, on the 6th inst. Dr. Turner was a gentleman highly respected, and a practitioner of acknowledged worth. Of late years he turned his attention to literature, and was a constant contributor to various medical and lay journals.

DR. WILLIAM P. P. SANDFORD

Died at his residence, No. 33 Commerce street, Newark, New Jersey, October 2d. He was born in 1806, and graduated from Columbia College in 1827. Studying medicine, he graduated from Rutgers College, New York, the same year. In 1835, his health falling him, he retired from his profession, having amassed a fortune. But his active mind would not let him remain long idle, and he took charge of an established school in Newark. After partially regaining his health, and having lost his property, he again took up the practice of medicine, and continued that practice, as his health would permit, till the time of his death.

MARRIAGES.

ATKINSON—CHAMBERLIN.—In Newbury, Vt., September 20th, by Rev. S. L. Bates, George H. Atkinson, Jr., M.D., of Brooklyn, N. Y., and Clara R. Chamberlin, of Newbury.

BENSON—GANSON.—On Wednesday, October 10th, at Grace Church, Jersey City, by Rev. Spencer M. Rice, Dr. S. L. Benson, of New York, and Helen Downs Ganson, daughter of John W. Downs, Esq., of Brantford, Ontario.

CONNELL—GAYLE.—Thursday, September 27th, 1877, at the Baptist church, New Liberty, Ky., by the Rev. G. W. Wheatley, Dr. J. W. Connell and Miss Mattie E. Gayle.

MITCHELL—THOMAS.—On the 3d instant, at St. Stephen's Church, Philadelphia, by the Rev. William W. Spear, D.D., J. Nicholas Mitchell, M.D., and Florence L., daughter of A. R. Thomas, M.D.

PRUYX—TOBEY.—October 3d, at Kinderhook, N. Y., by Rev. E. A. Collier, Peter V. S. Pruyx, M.D., and Mary B., daughter of Hon. Wm. H. Tobey.

SEGUR—DRELL.—On Wednesday, October 10th, by Rev. Charles H. Hall, D.D., Dr. E. A. Segur and Lina, dest daughter of Nathaniel E. Darrell, Esq., all of Brooklyn.

TALBOT—THOMAS.—On Tuesday, September 25th, 1877, at St. Paul's Church, Wickford, Rhode Island, by Rev. W. W. Ayers, assisted by Rev. G. I. Magill, Mary Charlotte, daughter of Allen M. Thomas, of Wickford, and Dr. Robert Bancker Talbot, of New York.

DEATHS.

LATHROP.—Suddenly, at Walluku, Maui, Hawaiian Islands, on September 1st, George A. Lathrop, M.D., of New York, in his 58th year.

PAUL.—On the morning of the 13th instant, John Rodman Paul, M.D., of Philadelphia, in the 76th year of his age.

SANDFORD.—In Newark, New Jersey, on Tuesday, October 2d, William P. P. Sandford, M.D.

SOUTHMAYD.—In Middletown, Connecticut, October 9th, 1877, Samuel G. Southmayd, M.D.